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ABSTRACT

In an effort to help shape a research agenda for rural education, this document reviews the research on rural education and at-risk students to determine the relative influence on student outcomes of poverty and community location. Sections of this review address: methodological considerations (definitions of "rural" and "at-risk," inadequate controls and comparisons, philosophical orientation of rural literature); the context of rural education (student distribution by rurality and poverty concentration); rural-urban differences in poor students' academic achievement, high school completion rates, and college aspirations; community and student characteristics (poverty, income sources, cultural milieu, ethnicity, single-parent households, limited English proficiency, parental educational attainment, substance abuse, absenteeism, student employment, teen pregnancy); and school characteristics (size, location, expenditures, courses and programs, staff qualifications, technology resources, school-community connections, parent involvement, social capital). Preliminary findings suggest that: (1) poor rural students' academic achievement is quite low but better than that of poor urban students; (2) the magnitude of the problem of low achievement is smaller in poor rural areas than in poor urban areas; (3) rural communities are quite diverse; (4) the characteristics of rural students differ from those of urban students overall, but the profile of poor rural students is similar to that of poor urban students; and (5) rural students attend smaller schools with community connections but a smaller breadth of course offerings than urban schools. Five main research recommendations are outlined. Appendices include participants at a rural education issues meeting, referenced journals, and definitions. (Contains 69 references.) (SV)

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STUDENTS AT RISK IN POOR, RURAL AREAS: A REVIEW OF THE RESEARCH

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TABLE OF CONTENTS

EXECUTIVE SUMMARY iii

INTRODUCTION 1

Background and Rationale for Key Questions 1
Sources of Information 2
Overview of the Paper 2

METHODOLOGICAL CONSIDERATIONS 3

Definitions of "Rural" 3
Definitions of "At Risk" 4
Inadequate or Missing Controls and Comparisons 4
Philosophical Orientation in Rural Research 5

CONTEXT OF RURAL EDUCATION 5

ACHIEVEMENT OF POOR, RURAL STUDENTS 7

Academic Achievement 8
Dropout Rates and High School Completion 9
College Aspirations 9
Summary 10

CHARACTERISTICS OF RURAL COMMUNITIES AND STUDENTS 10

Community Characteristics 10
Poverty 11
Sources of Income 11
Cultural Milieu and Social Organization 12
Student Background and Personal Characteristics 14
Ethnicity 14
Single-Parent Households 14
Limited English Proficiency 15
Educational Attainment of Parents 15
Student Behaviors 16
Substance Abuse 16
Absenteeism 16
Employment 16
Teenage Pregnancy 17
Summary 17

CHARACTERISTICS OF RURAL SCHOOLS 17

Rural School Characteristics 18
School Size 18
School Location 19
School Budgets 19
Course Offerings 20
Course-Taking Patterns 20
Availability of Special Programs 20
Staff Qualifications and Preparedness 21
Technology Resources 21
School-Community Connections 22
Parental Involvement in Student Education 22
Social Capital 23

Community as Curricular Resource 24
School-Business Relations 24
SUMMARY 24

CONCLUSIONS AND RESEARCH IMPLICATIONS 25

APPENDIX A: RURAL EDUCATION ISSUES MEETING PARTICIPANTS 29

APPENDIX B: REFERENCED JOURNALS 32

APPENDIX C: DEFINITIONS 33

REFERENCES 35

EXECUTIVE SUMMARY

In order to begin shaping a research agenda for rural education, the National Institute on the Education of At-Risk Students convened a meeting of experts, in November of 1996, to discuss issues related to at-risk students in rural schools. Participants suggested that poverty in rural America, as in inner cities, plays a large role in putting rural students at risk of educational failure. Yet, little knowledge is available on how the combination of rural location and poverty affect the educational outcomes of rural students. Participants suggested that the highest priority for the Institute should be to map the extent to which research has investigated rural issues, and to identify areas for future research.

In response, this document reviews the research on rural education and at-risk students in order to determine what the literature reveals about the combined influence of "poverty" and "community type" (in this case *rural* communities) on placing students at risk. The review specifically attempts to answer the following questions:

- Are students in poor, rural areas at a greater, equal, or lesser risk of failure than students in poor, urban areas? In effect, does location "matter" in student outcomes, or is poverty the main determining factor?
- What are the characteristics of poor, rural communities and their students?
- In what ways do the characteristics of rural schools benefit their students, and in what ways do they place students at risk?

To this end, we first compare the outcomes for students in poor, rural schools with those for students in poor, urban schools, in order to determine whether poverty alone affects student outcomes, or whether location also plays a role. Next, we examine the ways in which rural location and poverty may put students at risk of educational failure.

Our review reveals that the information on poor, rural students, communities, and schools is sketchy and not comparable across studies. Despite the difficulties of this incomparability, we draw some preliminary conclusions about students in poor, rural schools:

- Academic achievement of students in poor, rural schools is better than that of students in poor, urban schools, but it remains quite low.
- Overall, the magnitude of the problem of low academic achievement is smaller in poor, rural areas than it is in poor, urban areas, as a smaller proportion of rural students are poor and attend schools with other poor students.
- Rural communities are quite diverse, and their economic, social, and demographic characteristics vary across the country.
- The overall distribution of rural student characteristics indicates that, in general, they are different from students in urban schools — rural students tend to be white, live in two-parent families, and are seen as presenting fewer problems in schools — and, therefore, the strategies for dealing with this population may need to reflect such differences. However, minorities do comprise a large proportion of the rural *poor*, and, therefore, the

profile of many poor, rural students, especially in some persistent-poverty areas, is likely to be similar to that of many in poor, urban areas.

- Rural students attend smaller schools that are connected to the community, but they seem not to have the same breadth of curriculum offerings as their urban counterparts.

Based on the substance and nature of our findings, we also outline five main research recommendations for the Institute:

- Compare the achievement of poor, rural students with that of poor, urban students to better determine the extent and unique ways, if any, in which these students, in particular, are at risk of educational failure.
- Investigate the characteristics of poor, rural schools and districts to better understand the system-level factors affecting student outcomes.
- Develop a taxonomy of rural areas and their education systems that recognizes the ethnic, social, and economic diversity in rural areas.
- Review state, district, and school-based initiatives to improve rural education in order to gain insights into the educational problems and issues faced, and the methods used to solve those problems.
- Conduct focused, systemic case studies of poor, rural schools and districts and compare them to poor, urban school districts, as well as to wealthier rural schools and districts, in order to assess the commonalties and differences between these settings.

INTRODUCTION

To begin shaping a research agenda for rural education, the U.S. Department of Education's National Institute on the Education of At-Risk Students convened a meeting of experts, in November of 1996, to discuss issues related to at-risk students in rural schools. Of highest concern to the participants was that poverty in rural America, as in the country's inner cities, is putting a large number of students at risk of educational failure. The participants suggested that systemic factors such as geographic isolation and the imposition of an urban model of schooling in rural areas may play a large role in putting students at risk, and may add to the problem of poverty.

The resounding consensus among meeting participants was that, despite indications of less-than-desirable student outcomes in poor, rural communities, little comprehensive research currently exists examining why students in rural schools are not performing as well as their suburban counterparts, and what solutions may prove most beneficial. Participants suggested that the highest priority for the Institute should be to map the extent to which research has investigated such issues in rural education, and to identify areas in which more research is warranted. (Appendix A presents a list of meeting participants.)

In response, this document reviews relevant research on rural education to determine what the literature reveals about the influence of "poverty" and "community type" (in this case *rural* communities) on placing students at risk. This review specifically attempts to answer the following key questions:

- Are students in poor, rural areas at a greater, equal, or lesser risk of failure than students in poor, urban areas? In effect, does "location" matter, or is poverty the main determining factor in low student outcomes?
- What are the unique characteristics of poor, rural communities and their students?
- In what ways do the characteristics of rural schools benefit their students, and in what ways do they place students at risk?

Background and Rationale for Key Questions

The National Institute on the Education of At-Risk Students "...supports a range of research and development activities designed to improve the education of students at risk of educational failure because of limited English proficiency, poverty, race, geographic location, or economic disadvantage" (National Institute on the Education of At-Risk Students, 1997). The inclusion of poverty in the Institute's list of risk factors recognizes the influence of individual and family as well as school and community poverty in placing students at risk. Viewed from a systemic perspective, however, the combined inclusion of poverty and geographic location highlights a body of research focusing upon the effects of community and school characteristics on placing students at risk. This research shows that student outcomes can often be explained by differences in the composition of neighborhoods, with poor neighborhoods negatively affecting student outcomes (reviewed in Lippman et al., 1996). Research also reveals that, on average, students enrolled in high-poverty schools[1] tend to

[1] Schools with a high concentration of poor students.

perform at significantly lower levels than do students enrolled in low-poverty schools (Abt Associates, 1993).

One major strand of this body of research in the past few years has investigated the influence of poverty in *urban* areas (e.g., Bartelt, 1996; Wang et al., 1996; Wang & Kovach, 1996). However, a small but growing strand of research has focused on the effects of poverty in *rural* areas in putting students at risk of educational failure (e.g., Stern, 1994; General Accounting Office, 1994; DeYoung, 1992; Sherman, 1992). This research suggests that, although the focus on urban students is well-deserved, the plight of students in poor, rural areas is equally onerous and deserving of attention.

These strands of research collectively demonstrate that poverty plays a vital role in both urban and rural areas in placing students at risk of educational failure, but much of the research leaves unclear whether poverty *alone* is the implicating factor, or whether type of location (rural or urban) also makes a difference. In addition to poverty, other community characteristics may be important in determining a student's opportunity to learn, and, therefore, to attain high levels of academic achievement.

Sources of Information

The information in this paper comes from a number of different sources. Statistics on demographics and on student outcomes are from the publications of the U.S. Bureau of the Census and the National Center for Education Statistics. We also relied heavily upon *Urban Schools: The Challenge of Location and Poverty* (Lippman et al., 1996), as that report contains relevant comparisons between students in poor, rural schools and students in poor, urban schools. These comparisons illuminate differences due to geographic location, while taking area poverty into account. We have attempted to report current information and data, although, in some cases, the data are as much as nine years old.

We identified research articles on rural education through searches of the ERIC database, generally limiting ourselves to works published within the past few years. (Journals included in the database and covered by our search are listed in Appendix B.) Where possible, we have relied on extant reviews to provide background on particular rural education issues. As the number of comprehensive reviews is minimal, we also have relied on individual works. A few comprehensive research pieces from the literature on at-risk students and on factors affecting student opportunities to learn helped to frame the issues in the paper and to identify the direction of future research.

Overview of the Paper

In the first section of this paper we outline the methodological issues in rural research literature that affect answering the key questions. In the second section, we provide a brief context of rural education. In the next three sections, we provide answers, to the degree possible, to the key questions posed in this paper. In the final section, we summarize our findings, describe their implications for future research, and provide suggestions for future research.

Methodological Considerations

Assessing comprehensively the impact of poverty and rural location on student outcomes presents several major challenges, including:

- incomparable or inadequate definitions of "rural,"
- varying conceptualizations of the term "at-risk,"
- inadequate or missing comparisons or controls on relevant variables (e.g., levels of poverty), and
- philosophical orientation in rural literature.

Definitions of "Rural"

The four most frequently utilized definitions of geographic location (i.e., urban, rural, suburban, etc.) are from the U.S. Bureau of the Census, the Office of Management and Budget (OMB), the U.S. Department of Agriculture's Economic Research Service (ERS), and the National Center for Education Statistics (NCES). Research studies vary in which of the definitions they employ, often rendering difficult the comparability of results across studies. (Detailed definitions from these agencies are presented in Appendix C.)

The Census Bureau definition is based upon size and density of the population in an area. If an area has a population of less than 2,500 people, it is defined as rural. The OMB definition builds upon the Census definition, and designates entire counties as "metro" or "nonmetro." If a county does not have a city with 50,000 or more inhabitants, or an urbanized area with at least 100,000 inhabitants (75,000 in New England), the county is designated "nonmetro."

The ERS, on the other hand, uses rural-urban continuum codes to distinguish among metro counties, nonmetro counties adjacent to metro areas, and nonmetro counties not adjacent to metro areas. Even nonmetro counties not adjacent to metro areas, however, can have urban *or* rural populations. The NCES-developed code is similarly divided into seven categories, ranging from "large city" to "rural." A "large city" is a central city of a Metropolitan Statistical Area with a population greater than or equal to 250,000. A "rural" area is any incorporated place, Census-designated place, or non-place territory designated as rural by the Census Bureau.

While these different definitions overlap, each has its own implications in terms of the size, distribution, and characteristics of populations thought of as "rural." For example, because the Census Bureau uses a narrower definition of urban and rural (one not based upon county borders), it classifies 97 percent of total land area as rural; the OMB, on the other hand, uses a broader definition and designates entire counties as metro or nonmetro, and classifies about 84 percent of the land as non-metropolitan (General Accounting Office, 1993). However, many counties designated "metro" can have substantial portions of rural areas just beyond city limits (Larsen, 1993).

In the education research literature, similar problems exist. For example, tabulations in the *Schools and Staffing Survey* (1993-94) classify as "rural/small town" communities with a

population of less than 2,500 and defined as rural by the Census Bureau, or a small town, not within an SMSA, with a population less than 25,000, but greater than 2,500 and defined as urban by the Census Bureau. In using the Schools and Staffing 1987-88 data, the *Urban Schools* study (Lippman et al., 1996) classifies as "rural" schools located in a rural or farming community, a small city or town of fewer than 50,000 people that is not a suburb of a larger city, or part of an Indian reservation. Information on a place classified as "rural" in the *Urban Schools* report would not necessarily be comparable to that of a place designated "rural/small town" in *Schools and Staffing in the United States: A Statistical Profile, 1993-94.*

Not only have researchers not used a common quantitative definition of rural, many also have criticized existing definitions for being based solely upon population density or size, and not upon other characteristics that are quintessentially "rural" (e.g., Hodgkinson, 1994). Hodgkinson asserts, for example, that an area in southern New Hampshire, with magazine editorial offices and software development firms, may actually comprise an urban area in a low-density setting, and a comparison between it and the Mississippi Delta would be disingenuous. This criticism suggests that the type of employment available in the area is important to consider in classifying an area as urban, suburban, or rural. Others suggest that the degree of isolation from an urbanized area also is important in determining how "rural" a place is.

Definitions of "At Risk"

Research studies employ various definitions of "at-risk," sometimes without defining the term in relation to a specific factor or outcome. The National Institute on the Education of At-Risk Students defines "at risk" in relation to educational failure or low academic achievement. Several researchers have similarly conceptualized the term, and have considered students at risk of such immediate events as failing a course, dropping out of school, or not taking challenging courses (e.g., Thompkins & Deloney, 1994; DeYoung et al., 1989). However, others have focused on students at risk of unemployment, or simply lack of success in later life (e.g., Hepburn & White, 1990). More problematic are studies that identify students at risk of not performing well against some standard or criteria not clearly articulated in the study itself — a practice that has gained considerable criticism (e.g., Wehlage et al., 1989).

Inadequate or Missing Controls and Comparisons

The research on rural education often does not include adequate control variables, making it difficult to determine whether a particular phenomenon is truly "rural," or whether it is merely observed in a rural setting and could be associated with other conditions[2] (Coladarci, in *Proceedings of the Rural Education Issues Meeting*, 1996). Studies often incorporate incomplete models that fail to take into account confounding variables, such as family socioeconomic status and levels of education. Thus, results that may be explained by other variables are attributed to rural location, instead. For example, one group of researchers recently reexamined the differences in student aspirations between rural and non-rural students, and found that approximately half of the difference could be attributed to the lower socioeconomic status of rural families, and not solely to rural location (Haller & Virkler, 1993).

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[2] This criticism, however, is not unique to research on rural education.

In addition to a lack of control variables, studies often do not include comparison groups, making it difficult to determine whether the results apply only to a rural area, or whether the results are true for other locations as well.

Philosophical Orientation in Rural Research

One portion of the literature on rural education explicitly or implicitly espouses the view that a strong connection to the community and sense of place are values to be preserved in rural areas. It suggests that what is at risk is not the individual student, but the community as a whole. Thus, a large part of the literature on rural education is based upon the belief that rural areas should be preserved, and that keeping rural communities intact must be a goal of education. In this regard, what is often presumed to be putting students at risk of failure is a bureaucratized school system (that is unresponsive to local values and needs) and a trend toward urbanization, both of which ultimately deplete the community of its residents, either by the more well-educated leaving for larger cities, or by students leaving to attend college and to work in urbanized areas. Rapid growth in industry also is implicated in robbing the rural area of its sense of community.

Context of Rural Education

Rural students and their schools comprise a significant component of the American education system. In 1993-94, of the approximately 83,621 public elementary and secondary schools:

- Twenty-six percent (21,840) were located in rural[3] areas, and they enrolled 16 percent of the student population;
- Twenty-two percent (18,623) were located in small towns[4], and they enrolled 21 percent of the student population; and
- Ten percent (8,136) were located in large cities[5], but enrolled about 13 percent of the student population (*Revenues and Expenditures for Public Elementary and Secondary Education,* 1995).

The total population of students enrolled in public elementary and secondary schools was approximately 43.5 million. Figure 1 presents a more detailed distribution of public schools and students.

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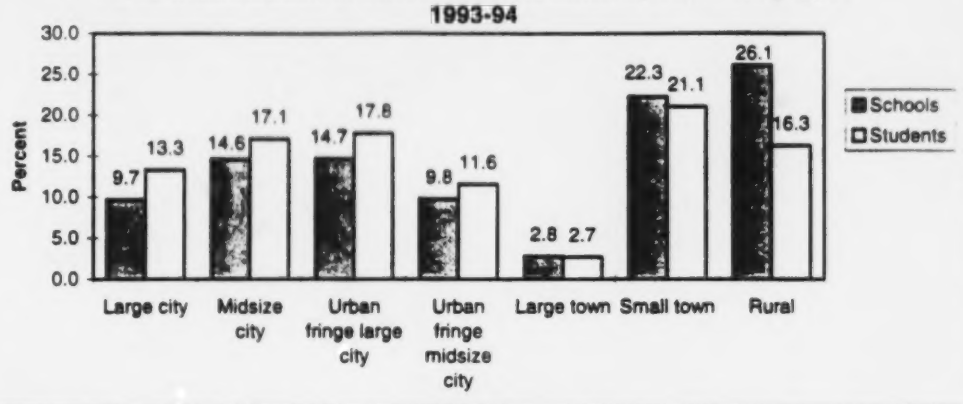
[3] A place with fewer than 2,500 people and coded as "rural" by the Census.

[4] A town not within an MSA, with a population between 2,500 and 24,999.

[5] Central city of an MSA with a population of at least 400,000, or a population density of at least 6,000 people per square mile.

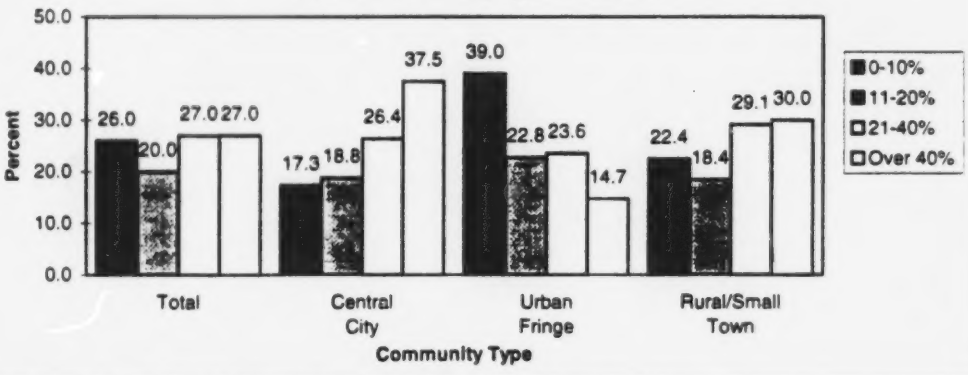
FIGURE 1
Percent distribution of schools and students, by community type: 1993-94



SOURCE: National Center for Education Statistics, *Common Core of Data*, School Universe, 1993-94

Data from the most recent *Schools and Staffing Survey* show that, in 1993-94[6], 59 percent of rural/small town[7] and 63 percent of central city[8] students were enrolled in mid- to high-poverty schools. A mid-poverty school is one in which 21 to 40 percent of students were poor[9], and a high-poverty school is one in which 41 percent or more students were poor (after Lippman et al., 1996). Figure 2 presents these data.

FIGURE 2
Percent distribution of students, by school poverty concentration within community type: 1993-94



SOURCE: National Center for Education Statistics, *Schools and Staffing Survey*, 1993-94
Figures based on analysis conducted by Pelavin Research Institute.

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[6] Analysis conducted by Pelavin Research Institute, using the 1993-94 *Schools and Staffing Survey* data.

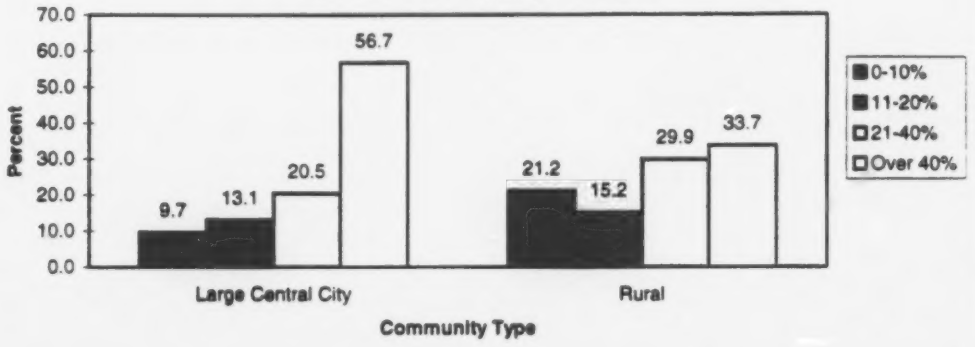
[7] Rural/Small Town comprises a rural place with a population of less than 2,500 and defined as rural by Census, or a small town with a population less than 25,000, but greater than or equal to 2,500 and defined as urban by Census.

[8] A large central city (a central city of a SMSA with a population greater than or equal to 400,000, or a population density greater than or equal to 6,000 per square mile) or a mid-size central city (a central city of a SMSA having a population less than 400,000 and a population density less than 6,000 per square mile).

[9] Students receiving free or reduced-price lunch.

When we consider only "rural"[10] areas and "large central cities,"[11] 64 percent of rural students and 77 percent of urban students were enrolled in mid- to high-poverty schools. Figure 3 presents these data.

FIGURE 3
Percent distribution of students, by school poverty concentration within community type: 1993-94



SOURCE: National Center for Education Statistics, *Schools and Staffing Survey*, 1993-94
Figures based on analysis conducted by Pelavin Research Institute.

Slightly older data, from the 1987-88 *Schools and Staffing Survey*, show that:

- Fifty-six percent of rural[12] students, and 62 percent of urban students were enrolled in mid- to high-poverty schools; and
- Twenty-five percent of rural students, and 40 percent of urban students were enrolled in high-poverty schools (Lippman et al., 1996).

While these data are not strictly comparable, as the definitions of "rural" and "urban" are slightly different, they do indicate that higher proportions of urban than rural students are enrolled in high-poverty schools.

Other poverty-related data reveal that approximately 25 percent of Title I funds are spent in non-metropolitan areas, with the greatest concentration in the rural South, Appalachia, and Indian reservations in the West (Greenberg, 1995).

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[10] A small rural area is a place with fewer than 2,500 people or a place designated as rural by the Census.

[11] A large city is a central city of a standard metropolitan area having a population greater than or equal to 400,000 or a population density greater than or equal to 6,000 people per square mile.

[12] In the Lippman et al. (1996) report, "rural" comprises a rural or farming community, a small city or town of fewer than 50,000 people that is not a suburb of a larger city, or an Indian reservation. "Urban" comprises cities of 50,000 people or more.

Achievement of Poor, Rural Students

In answering the question, *Are students in poor, rural areas at a greater, equal, or lesser risk of educational failure than students in poor, urban areas?* we focus on the following outcomes:

- academic achievement,
- high school completion and dropout rates, and
- student aspirations to attend college.

By focusing on such school-related events (rather than success in later life), we can more closely approximate the At-Risk Institute definition, and we can discuss in relevant terms the policy and research implications for rural education.

Academic Achievement

Some research studies suggest that the academic performance of students in poor, rural areas is better than that of students in poor, urban areas, but the evidence is far from definitive. Analysis of data from the 1992 *National Assessment of Education Progress* (*NAEP*) shows that the average proficiency of students from "extreme rural" communities[13] at ages 9, 13, and 17 in writing, mathematics, and science was above that of students from "disadvantaged urban" areas. [14] Furthermore, students in extreme rural areas outperformed students in disadvantaged urban areas in reading at grades 4, 8, and 11 (Mullis et al., 1992). However, while both groups are, by definition, disadvantaged, poverty is not strictly controlled for in this analysis, and, therefore, the differences between students in poor, rural and poor, urban communities are not entirely clear.

Some older data shed additional light on these general findings. Results from the *National Educational Longitudinal Study* of 1988 show that grade 8 achievement in 1988 of rural[15] students enrolled in high-poverty schools was higher than that of their urban counterparts (Lippman et al., 1996). Two years later, however, in grade 10, the performance of these rural students was the same as that of urban students (Lippman et al., 1996).

Other data, disaggregated neither by levels of poverty nor by the economic status of the community, show that the performance of rural students tends to be higher than, or equal to, that of urban students, and the performance of both groups tends to be lower than that of suburban students. For example, fourth graders in "rural areas" and "small towns" exhibited higher reading proficiency than did students in central cities, but students in "urban fringe" and

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[13] Students in "extreme rural" areas reside outside Metropolitan Statistical Areas, and attend schools in areas with a population below 10,000 where many of the students' parents are farmers or farm workers (Mullis et al., 1994, pg. 316).

[14] Students in "disadvantaged urban" areas reside in Metropolitan Statistical Areas and attend schools where a high proportion of students' parents are on welfare or are not regularly employed (Mullis et al., 1994, pg. 316).

[15] In this study, schools classified as rural are located outside of Metropolitan Statistical Areas (MSAs); schools classified as urban are located in central cities of MSAs.

"large town" areas outperformed their counterparts in both areas (Campbell et al., 1996). At grades 8 and 10, rural students' performance was comparable to that of their urban and central city peers. Another study demonstrates that 17-year-old students in central cities and in rural communities adjacent to metropolitan areas have, since 1975, performed on *NAEP* at levels lower than the national average (Greenberg & Teixeira, 1995).

Dropout Rates and High School Completion

Data indicate that the dropout rate for rural students tends to be lower than that for urban students. Between 1987 and 1989, 13.4 percent of rural youth between 16 and 24 were found to be out of school without a high school or equivalent degree, compared with 15.3 percent in the cities (Sherman, 1992). For African American students, however, the dropout rate in rural communities was as low as it was in the cities. In 1993, the dropout rate for non-metropolitan 16- to 24-year olds was 11 percent, as compared with 17 percent for those in inner cities, and 9.3 percent in suburbs (Paasch & Swaim, 1995).

High school completion data indicate a similar pattern — rural communities and small towns had a graduation rate of about 95 percent in 1993, while urban students had a rate of 90 percent (Snyder et al., 1996). Further analysis using the same data (Schools and Staffing Survey, 1993-94) shows that high-poverty urban schools had a graduation rate of 90 percent, while high-poverty rural schools had a rate of 94 percent[16].

Despite lower dropout rates, research suggests that fewer rural dropouts ever return to complete their education (Stern, 1994; Sherman, 1992). Thus, lack of school completion may have more severe consequences for rural students than for other students. Overall, however, the degree to which these results can be attributed to location, and the degree to which they can be explained by differences in poverty, is not clear.

College Aspirations

Despite a fairly high rate of secondary school completion, fewer rural graduates may aspire to and go on to higher education. Among the senior class of 1992, 71 percent of rural and non-metropolitan students reported plans to go to college right after high school, compared to 78 percent of urban and suburban students. Six percent of students in rural areas and 3 percent in urban areas had no plans to attend college (Snyder et al., 1996).

However, when we consider the rates of college application, in 1993-94, about 55 percent of high school seniors in both central cities and rural/small towns applied to college (Henke et al., 1996). Furthermore, college completion rates of the two areas may be on par — among the 1980 high school graduates, 16 percent of rural and 16 percent of city students received their BA degrees by 1986 (with the suburban rate being much higher at 22 percent) (Sherman, 1992).

While the overall rates of college application and completion are similar for students in rural and urban areas, how students from poor, rural schools fare in comparison to students

[16] Analysis conducted by Pelavin Research Institute.

from wealthy, rural areas and to students from poor, urban schools is not evident from these data.

Summary

The research reviewed suggests that students in poor, rural areas have better academic outcomes than do students in poor, urban areas, but it is less clear whether students in these two areas differ on dropping out or on going to college. Most of the data available on student outcomes are not disaggregated by location *and* by poverty, and little available research uses both variables simultaneously in examining such differences. Some of the better outcomes for rural students (not controlling for poverty) may be a function of a smaller proportion of rural students being enrolled in high-poverty schools, as compared with students in urban areas. Thus, the degree to which student outcomes for students in poor, rural areas are similar to, or differ from, those for their urban peers is not clear, and the degree to which geographic location plays a role, after poverty is taken into account, is not apparent.

In the next two sections we examine the ways in which in poor, rural areas may place students at risk of educational failure. We first examine the characteristics of rural communities and of their students. Next we analyze the education system factors that might facilitate or hinder the education of students in poor, rural areas, given community and student characteristics. Education arrangements that might be expedient in the urban setting may prove to be less effective in the rural setting, and vice versa. We explore these issues to the extent possible from the current literature.

Characteristics of Rural Communities and Students

Harold Hodgkinson recently observed, "...rural poverty is not urban poverty in a different setting" (1994, p. 2), implying that structures and processes that place students at risk for failure in rural settings are distinct from those in urban or suburban settings. Students in rural areas in general, and in poor, rural areas in particular, may face a unique mix of obstacles to gaining a sound education.

In this section, we examine the community and student background characteristics in poor, rural areas in an attempt to identify this unique mix of obstacles. In order to frame our review and to focus on specific issues, we draw upon the findings in the general literature on at-risk students, and upon research examining the role community factors play in determining students' opportunity to learn.

Community Characteristics

Research suggests that an understanding of community context is important in comprehending how rural (and other) schools function, and in determining the causes of educational failure (e.g., Larsen, 1993). Current literature reveals a tremendously complex picture of rural communities. Below, we provide an overview of the economic and social characteristics of poor, rural communities. In some cases, we also contrast the characteristics with those of poor, urban areas.

Poverty

According to the 1995 March Current Population Survey, the rates of poverty in non-metropolitan and central city areas were as follows:

- About 16 percent of the total nonmetropolitan population, and 22 percent of the nonmetropolitan population under age 18, were living below the poverty line; and
- About 21 percent of the total central city population, and 33 percent of the central city population under age 18, were living below the poverty line.

Data reveal that poverty tends to be more concentrated in central cities. In 1990, 52 percent of the inner city poor, as compared to 40 percent of rural poor, lived in high-poverty areas (Hodgkinson, 1994).

Data also show that rural poverty is not evenly distributed across the country, and can be concentrated in pockets of rural areas. Disaggregated information reported by Hodgkinson (1994) shows that, in 1990, the South had the highest poverty rate and the Northeast the lowest. A majority of the rural poor were residents of the South (52 percent), while 25 percent were in the Midwest, 14 percent were in the Northeast, and 8 percent were in the West. Furthermore, 27 percent of rural counties were rated in 1990 as "persistent poverty counties," in which persons with poverty-level income in the preceding year were 20 percent or more of the total population in each of four years, 1960, 1970, 1980, and 1990 (the Economic Research Service). For minorities in these areas, poverty rates often exceeded 50 percent (Summers, 1995).

In the same year, 1990, the vast majority of poor rural residents were white (73 percent), while 24 percent were African American, and 5 percent were Hispanic. These ethnic groups also were not evenly distribution across the country: 97 percent of the poor, rural African Americans, but only 44 percent of the poor, rural white, lived in the South (Summers, 1995). Furthermore, in some poor regions, minorities comprised the majority of the population. For example, in the Mississippi Delta region, where the poverty rate was 44 percent, 64 percent of the residents were African American. In general, as in urban areas, African Americans, Native Americans, and Hispanics in rural areas were more likely to be poor and to be concentrated in poor communities (Hobbs, 1995).

Other data indicate that poor, rural families are likely to be employed. In 1990, 65 percent had at least one member of the family working, and 25 percent had two members working (Summers, 1995). However, their income generally was insufficient to keep them out of poverty, and they were not as likely to receive aid as were urban families. Only 47 percent of poor, rural families with children received Aid to Families with Dependent Children (AFDC) in 1990, versus 67 percent of poor families in cities (Sherman, 1992).

Sources of Income

According to a General Accounting Office report released in 1993, farming remains a significant source of income in rural communities, although it no longer remains the primary

economic activity[17] in most areas. While farming is a primary economic activity in 22 percent of non-metropolitan counties, manufacturing is predominant in 40 percent of the counties. The distribution of various economic activities varies greatly by region, with farming concentrated in the Midwest, mining in the Appalachian region and in parts of the West, and manufacturing in the South and eastern United States (General Accounting Office, 1993). However, much of the economic growth in recent years has been in the "low-skill" service sector (Hodgkinson, 1994).

Several recent trends in these economic activities have contributed to rural poverty. According to Fitchen (1995), such trends include: stagnation and decline, restructuring of manufacturing, transition to service sector employment, and transformation of the food production industry. Several rural regions have suffered economic stagnation, with concomitantly high rates of poverty and unemployment. These areas include the Mississippi Delta, northern New Mexico, and northern Appalachia. Others have experienced high-poverty rates due a decline in extractive industries, and still others have experienced a loss of jobs in manufacturing. Areas that did experience a rise of manufacturing produced low-skill, low-wage jobs and real earnings from such jobs have declined in recent years (Hirschel and Brown, 1995).

The growth in service sector and large-scale, labor-intensive agriculture jobs also has contributed to rural poverty by adding to the number of the working poor, as income from such jobs is typically inadequate for supporting families (Fitchen, 1995). For example, in parts of the Southwest, California, the Northwest, and the Plains, the growth in labor-intensive agriculture has led to an increase in year-round jobs. However, poverty prevails in communities that have developed around such areas, as among other factors, the income from such jobs is low, and the households dependent upon incomes from such employment tend to be larger than average (Fitchen, 1995).

These economic trends suggest that rural poverty is concentrated not only in areas where employment opportunities from old industries, such as agriculture and mining, are declining, but also in places where new employment opportunities are becoming available. The new employment opportunities typically offer low wages, thereby providing few avenues out of poverty.

Cultural Milieu and Social Organization

Ethnographic and sociological research suggests that the cultural milieu, social structure, and social capital of poor, rural areas is quite distinct from that of other areas. Researchers argue that the assets of rural communities include the presence of strong community connections, a sense of localism and value of place, and informal community decision-making mechanisms (e.g., *Proceedings of the Rural Education Issues Meeting*, 1996; Howley & Howley, 1995; DeYoung, 1994). Rural researchers suggest that schools in these communities are tightly linked to the communities they serve (e.g., Theobald & Nachtigal, 1995), a theme notably absent in the literature on urban schools and communities.

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[17] Defined as an industry that provides 20 percent or more of a county's labor and proprietor (earned) income (General Accounting Office, 1993, p.1).

Hobbs (1995) also points out, however, that there is tremendous diversity in the social organization of rural areas. The mix of organizations and institutions varies greatly by locality, as the local organizations dedicated "...to preserving local traditions, distinctiveness, and identity have been joined by institutions and organizations dedicated to drawing rural producers and consumers into a mass society and a global economy" (Hobbs, 1995, p. 372).

Hobbs (1995) further indicates that many of the conditions of urban life are now being reproduced in rural areas. Institutions and organizations related to health, education, and retail trade have had a standardizing effect on rural areas, as their mode of operation is similar across location. On the other hand, "rural industrialization," and tourism have contributed to greater regional specialization and perpetuation of rural diversity. The nonlocal economic institutions, however, have reduced local autonomy and altered the sense of community in rural America. Thus, interests of the local people may now be divided along age, occupation, and social-class lines, as the path to acting on those interests may lie through specialized organizations outside the local community (Hobbs, 1995). Hobbs' analysis indicates that conditions considered to be typically rural may not be true for all rural areas, and a "sense of localism" and "value of place" may be true for some rural communities, but not for others.

Hobbs (1995) indicates that persistent-poverty areas, in fact, have fewer indigenous organizations representing local interests than do wealthier rural areas. Where they do exist in poor communities, participation in them is related to income. Other institutions found in poor areas have usually originated in the larger society and are controlled by external interests (Hobbs, 1995). Thus, the mechanisms for participation and decision-making may actually be weak in such areas.

Community Characteristics and Education

Research shows that the diversity of economic and social conditions in rural communities is reflected in the diversity of problems and possibilities in rural education. According to Gjelten (1982), for example, economically stable rural communities are able to support an effective education system, except when faced with consolidation, and students from these communities score above average on achievement tests and are more likely to attend college than are their urban peers. They also have a strong sense of identity.

At the other end of the economic spectrum, although economically depressed communities may have a strong sense of community, they often experience severe problems in their education system. The children in these communities do not have the opportunity to receive an education similar in quality to that received by children in wealthier communities. In fact, in depressed agricultural areas, the diminished ability of many school districts to maintain (and increase) educational spending is a major cause for concern (DeYoung, 1987).

Similarly, in isolated communities, which can be poor or wealthy, growing or declining, access to resources and services can be a problem. Vocational education, staff development, and interscholastic athletic programs can be constrained, due to large distances from other communities. Furthermore, students leaving the community for postsecondary education must face a new environment for which they may be unprepared.

Based on this diversity, Gjelton developed a five-point typology for rural communities (Gjelton, 1982). Although the proportion of each of Gjelton's community types has probably changed since the early 1980s due to economic changes in rural areas, the education issues and problems associated with each type may not have, and the model may likely still be applicable. Furthermore, many of the problems faced by depressed and isolated communities, such as a lack of financial resources, may be similar to those faced by poor, urban school systems, although the nuances in the manifestation of the problems are likely to be different. At issue are the factors that lead to urban, as well as rural poverty and the consequent loss of political and economic power. Hobbs (1995), in fact, suggests that rural problems are more and more determined by factors outside of rural areas; and rural localities may benefit from policies addressed to both urban and rural needs.

Student Background and Personal Characteristics

Several student background and personal characteristics have been implicated as putting students at risk of educational failure. Such characteristics include minority group status, living with a single-parent, limited English proficiency, low parental educational achievement, and disabled status (Thompkins & Deloney, 1994). In this section, we consider the degree to which these factors characterize poor, rural students.

Ethnicity

Ethnicity is often cited as a factor putting students at risk for educational failure. *NAEP* data show, for example, that African American and Hispanic students attain significantly lower proficiency scores on tested subjects than do white students (Campbell et al., 1996).

Overall, rural students tend to be white and attend schools with a low minority enrollment. In 1991, 85 percent of rural children versus 78 percent of children in metropolitan areas were white (Sherman, 1992). The distribution of minority students in rural areas, however, varies greatly from region to region, with more such children being concentrated in the South and the West. In the South, one in four rural children was African American in 1991, while only 4 percent were Hispanic. In the West, Hispanic children accounted for 13 percent of the rural child population (Sherman, 1992).

High-poverty rural schools tend to enroll larger proportions of minority children than do rural schools with lower poverty concentrations, although the proportions are still well below those in poor suburban and urban schools. In 1988, 65 percent of students in high-poverty, rural schools were white, and 35 percent belonged to a minority group (Lippman et al., 1996). In contrast, high-poverty schools in urban and suburban areas enrolled 69 percent and 57 percent minority students, respectively (Lippman et al., 1996). While the proportion of minorities in rural schools has, in all likelihood, increased (as there has been an increase in the proportion of total U.S. minority population), the increase is not likely to equal that in central cities.

Single-Parent Households

Students who live in single-parent households tend to have lower achievement rates and higher school dropout rates than do students from more traditional, two-parent households (Thomkins & Deloney, 1994). Lack of time for single parents (90 percent of whom are mothers) to spend with children, coupled with increased economic burdens from a single source of income, produces less-than-desirable household conditions and, in turn, affects student outcomes.

Rural students, in general, are less likely to be living with single parents than are urban students (Lippman et al., 1996; Sherman, 1992). According to figures from the *National Educational Longitudinal Study* of 1988, only 25 percent of eighth-grade rural students in high-poverty schools were likely to be living in single-parent families, while 36 percent of their urban peers were likely to be living in such a situation (Lippman et al., 1996). In 1990, 62 percent of poor, rural households were composed of two-parent families (Hodgkinson, 1994). The figure from Lippman indicates a lower incidence of single-parent households among the rural poor.

Limited English Proficiency

Students with limited English proficiency (LEP) are often at risk of educational failure due to the classroom challenges they face, particularly where bilingual curricula or English-as-a-Second-Language (ESL) programs are not readily available.

In 1989, 4.6 percent of the total student population was considered to have difficulty speaking English, which reflected a gradual increase over the previous decade. In rural areas in 1988, the rate of LEP students was 1.9 percent, but in urban communities, it was 9.1 percent (Lippman et al., 1996). However, the incidence and concentration of the LEP population in poor, rural areas could be higher due to a greater concentration Hispanic children in such communities.

Educational Attainment of Parents

Literature on the subject indicates that low educational attainment of parents, especially mothers, has a negative effect on student achievement (Thomkins & Deloney, 1994). Low educational attainment is often widespread in rural areas, as local employment markets traditionally have not provided incentives to pursue higher education, and have offered, instead, employment opportunities with minimum educational requirements (DeYoung et al., 1989). (At least one study suggests, however, that rural residents may not lack the skills for doing high-skill work, but that there just has not been a sufficient amount of investment in rural areas to make use of such skills (Greenberg & Teixeira, 1995)).

The Lippman report (1996) shows that the percentage of eighth-grade students in rural communities in 1988 with a parent in their household who had completed four years of college was 18 percent, similar to that of urban students at 20 percent. After controlling for school poverty, however, rural students were least likely to have a college-educated parent, below both urban and suburban students. When considering only high-poverty schools, equally low proportions (about 12 percent) of rural, urban, and suburban students enrolled were likely to

have a college-educated parent, indicating no differences between the two types of communities.

Parents' own educational experiences also shape the expectations they themselves hold of their children. In 1988, fewer rural parents expected their children to graduate from a 4-year college than did suburban or urban parents, even after accounting for differences in poverty. For students enrolled in high-poverty schools, however, there were no differences in parental expectation; only about half expected their children to graduate from a 4-year college (Lippman et al., 1996). These results indicate that, at least for parental expectations, location does matter.

Student Behaviors

A number of student behaviors also are associated with being at risk of educational failure, including substance abuse, employment while in school, and teenage pregnancy (Thompkins & Deloney, 1994). In this section, we consider the degree to which those factors characterize poor, rural students.

Substance Abuse

Teens in rural areas appear to prefer alcohol, while youth in larger communities display higher rates of drug use (Thomkins & Deloney, 1994). Eighty percent of rural junior and senior high school teachers surveyed in 1995 felt that drinking was a problem, whereas 55 percent reported drug use to be a problem. On the other hand, 61 percent of urban teachers felt that alcohol was a problem, and 73 percent thought that drugs were a problem (Snyder et al., 1996). Interestingly, older data from the *NELS:88* study reveal that, in high-poverty high schools, there were no differences in the percentage of rural, urban, and suburban secondary school teachers reporting student alcohol use as a serious problem in their schools. Furthermore, the percentage (56 percent) for high-poverty, rural school teachers reporting this problem was lower than the average (65 percent) for rural teachers in general (Lippman et al., 1996).

Absenteeism

Student absenteeism from classes is often cited as a factor strongly associated with low educational attainment and dropping out of school, and often is considered to be one of the most serious problems teachers must address. After controlling for poverty, more (78 percent) urban teachers consider student absenteeism to be a serious problem in their schools, than do rural teachers (63 percent). This finding held for teachers in high-poverty schools; more high-poverty, urban school teachers rated student absenteeism to be a problem than did high-poverty, rural school teachers (84 percent as compared with 65 percent) (Lippman et al., 1996).

Employment

DeYoung et al. (1989) have argued that a rural economy that offers employment with minimal educational requirements makes the choice of work over school a more viable option

for students. The *Urban Schools* report found, however, that in 1990, rural 10th graders were no more likely to work 11 or more hours per week than were urban students; 17 percent of rural students and 18 percent of urban students worked 11 or more hours per week. Furthermore, there were no differences between urban and rural students enrolled in high-poverty schools. In fact, a higher percentage of rural students in *low*-poverty schools worked than did rural students in high-poverty schools (22 percent and 12 percent, respectively) (Lippman et al., 1996). These data, however, do not take into account students who may have dropped out of school in order to work, and a higher proportion may be working than is captured in these data.

Teenage Pregnancy

Approximately 40 percent of young women who drop out of school do so because of pregnancy or marriage, suggesting an association between teenage pregnancy and educational failure (Thompkins & Deloney, 1994). Controlling for poverty, while teachers consider teenage pregnancy to be more of a problem in urban schools than in rural schools, an equally high proportion (50 to 55 percent) of rural and urban teachers consider it to be a problem in high-poverty schools (Lippman et al., 1996). Other than teachers' opinions, we found no studies discussing the actual *rates* of pregnancy among students in high-poverty rural and high-poverty urban areas.

Summary

The overall community and student characteristics in rural areas indicate that, in some ways, the economic and social structure of rural communities is different from urban communities, and rural students are different from those residing in urban areas. The economic base of rural communities comprises manufacturing, mining, farming, and, increasingly, service industries. However, shifts in these economic sectors has generated low-paying jobs and contributed to rural poverty. An investigation of student characteristics reveals that, overall, rural students tend to be white and come from two-parent families.

This overall picture, however, masks the diversity of rural communities. For example, economic opportunities and poverty are not distributed evenly across the country, and, consequently, the social organization of the community also varies across localities. In addition, regional data indicate that large proportions of students in poor communities, especially in persistently poor regions, may comprise ethnic minorities. Thus, a finer-grained picture of poor, rural communities is needed to assess the educational opportunities and outcomes for students in such communities.

Characteristics of Rural Schools

A large segment of the literature on rural education within the past few years has attempted to identify the effects of rural school characteristics on student outcomes. This research suggests that, although students in poor, rural schools are at risk by virtue of poverty, in other ways, they are benefit simply from *being* "rural"— that features unique to rural schools help shield students against educational failure. In fact, education researchers have begun to argue that rural schools can provide some lessons for school reform in other

communities (e.g., Ballou & Podgursky, 1995). They and other critics of school reform contend that urban structures, such as schools based on the "industrial model of education," tend to decontextualize education and undervalue local communities, placing students at risk of failure (Nachtigal, in *Proceedings of the Rural Education Issues Meeting*, 1996). The suggestion is that urban schools must learn from the rural school model, and not vice versa.

In this section, we describe the characteristics of rural schools from the complementary perspectives of the at-risk literature and the literature focusing upon factors affecting students' opportunity to learn. We also discuss school-community connections, as research on rural schools suggests that this factor is a key component in determining the success of rural schools (Stern, 1994).

Rural School Characteristics

Below, we discuss the characteristics of rural schools believed to affect rural students either positively or negatively, including school size, location, budget, course offerings, course-taking patterns, availability of special programs, staff qualifications and preparedness, and technology resources.

School Size

Due to isolation and low population density in rural communities, rural schools are typically small compared to schools in more populated communities. In 1992:

- Seventy-three percent of rural secondary schools had fewer than 400 students in them, and those schools served nearly 40 percent of all rural secondary students;
- In contrast, fewer than 17 percent of urban secondary schools were as small, and represented only 5 percent of urban secondary students (Stern, 1994).

Only 2 percent of rural schools had enrollments exceeding 1,200, and these schools accounted for only 12 percent of all rural secondary students (Stern, 1994).

More recent data from the *Schools and Staffing Survey* (1993-94) show that the average size for schools in central cities was 634 students, but in rural and small town areas the average was 401 students (Henke et al., 1996).

Research over the past few years on school size suggests that small schools are in many ways more effective than large, urban schools in providing educational and social resources for students, and, therefore, rural schools are in a good position to cultivate their advantages (Howley, 1994). There is some disagreement over whether small school size is, in fact, best for all students (e.g., Kearney, 1994), or whether small schools most benefit disadvantaged youth while large schools benefit affluent youth (e.g., Howley, 1996; Huang & Howley, 1993; Friedkin & Necochea, 1988). Still others have suggested a compromise, where "schools should be neither too large to inhibit a strong sense of community nor too small to offer a full curriculum and adequate instructional facilities" (Lee, Bryk, & Smith, 1993).

Despite the ensuing arguments over who benefits from small schools, most researchers agree that small schools tend to cultivate a positive school climate, an orderly environment, a high level of student-faculty engagement, and better school-community relations (Thompkins & Deloney, 1994; Kearney, 1994).

In recent years, however, rural schools have grown larger, due to school consolidation brought about by funding pressures (Stern, 1994). Rural educators suggest that such consolidations enlarge the size of the school, remove schools from the immediate vicinity of the community, and increase the average commuting distances of students, thereby reducing the effectiveness of the school. Others suggest that even when consolidation is implemented, rural schools are smaller, have fewer dollars, and provide fewer opportunities to learn than do schools in other communities (Herzog & Pittman, 1995). The degree to which schools in poor, rural communities also are small and possess these characteristics is not presently known.

School Location

In sparsely populated rural areas, students often travel long distances to attend school. Transportation for such long distances is costly, and the daily commute imposes a severe constraint on the daily lives of these students (Fox, 1996). This may be particularly true in poor communities, where such constraints could mean the difference between a student attending school or dropping out to find employment. Further research is needed to determine the extent to which student transportation is a problem in poor, rural communities, and what solutions are necessary to alleviate the constraints these factors cause.

School Budgets

Although the relationship between expenditures and student achievement remains controversial, some literature indicates that expenditure is positively related to student outcomes (Hedges et al., 1994). Several researchers suggest that rural budgets often are small and do not adequately cover the considerable costs of operating the school (Larsen, 1993; Sherman, 1992). Rural schools frequently serve a smaller student population that is spread out over a larger area, making the fixed cost of maintaining a school building and operation high when expressed in per-pupil expenditures (Sherman, 1992).

In 1993, the per pupil expenditures in rural areas was $4,358, and in large central cities it was $5,560 (Snyder et al., 1996). (However, these figures are neither cost- nor need-adjusted, rendering comparisons difficult.) According to Sherman (1992), rural governments face lower revenues than do city governments, due to a smaller tax base and lower property values. This leads to tight budgets that often translate into limited curricular and program offerings, lower teacher salaries, and a lack of sufficient technology resources, leading many to argue that rural students are not receiving the quality curriculum and education they need to compete nationally and globally.

A picture of the regional variation in revenues and expenditures is essential to understand the impact of school budgets on education in rural areas, especially in poor, rural areas. A typology of the funding mechanisms states use to finance education in poor, rural areas also is needed. This typology would help to determine the implications of those mechanisms for school operations and students' opportunity to learn.

Course Offerings

The availability of courses and the courses students take are shown to be powerful predictors of academic achievement and college enrollment (Lee, Bryk, & Smith, 1993; Pelavin & Kane, 1990). In the early 1980s, half of city schools and two thirds of suburban schools offered calculus, as compared with only one third of rural schools (Sherman, 1992). Other, more recent studies in rural school districts indicate that the number of courses and of special programs offered to rural students is much smaller than that offered to suburban students (e.g., Ballou & Podgursky, 1995; Hall & Barker, 1995). Smaller schools simply are unable to provide advanced or college preparatory courses (Greenberg, 1995) — and in poor, rural schools, this reality may be especially true. Comparative description of poor, urban and poor, rural schools are lacking, and, therefore, it is difficult to determine whether the financial constraints and decision processes that lead to fewer course offerings are similar or dissimilar across these two settings. Policy implications would be quite different if they are similar than if they are dissimilar.

Course-Taking Patterns

National data provide some insight into the course-taking patterns of youth in rural schools. Rural students in 1990 were more likely than their non-rural peers to take six or more vocational education credits, even after accounting for poverty levels (Lippman et al., 1996). On the other hand, rural high school seniors were just as likely to have taken geometry as their urban counterparts, a finding which is also true for students enrolled in high-poverty urban and rural schools (Lippman et al., 1996). However, a study of educational equity in North Carolina revealed that in 26 poor districts (most of which were rural), not one student took an Advanced Placement exam (cited in Herzog & Pittman, 1995), and students in one poor, rural county had 116 fewer courses to choose from than did students in other counties. These limited data indicate that poor, rural students may not experience a greater disadvantage in being able to take some standard, core subjects. However, they may not have available to them the variety of courses their wealthier counterparts have.

Availability of Special Programs

Programs and extracurricular activities offered in rural schools also are limited, thereby affect rural students' opportunity to learn. For example, national data from 1988 show that 75 percent of rural elementary schools offered gifted and talented programs to their students, matching that of urban schools, but falling well below suburban schools (Lippman et al., 1996). Among high-poverty schools, however, more rural (70 percent) than urban (66 percent) schools offered such programs. More recent data from the 1993-94 *Schools and Staffing Survey* reveal that 71 percent of rural/small town schools offered gifted and talented programs, as compared to 67 percent of urban schools (Henke et al., 1996).

On the other hand, only one quarter of schools in rural areas offered special programs for pregnant teenagers, as opposed to one third of city and suburban schools (Sherman, 1992). Data also reveal that fewer sports activities were offered in 1990 to grade 10 students in rural schools, a finding which is true in high-poverty schools as well (Lippman et al., 1996). A number of reasons are cited for this phenomenon, including a smaller and more dispersed

student body, and isolation from other communities, making it more difficult to share resources effectively and efficiently (DeYoung, 1987).

Studies also suggest that rural areas have a disproportionate number of special-needs students, but the funding system varies from state to state, with some benefiting such areas, and others not (reviewed in DeYoung, 1987).

Staff Qualifications and Preparedness

The quality of school staff also has been identified as a key factor in influencing student outcomes (Lee, Bryk, & Smith, 1993). However, teacher experience and the recruitment and training of teachers are frequently cited as a major problems in rural areas (Ballou & Podgursky, 1995; Larsen, 1993). The 1993-94 *Schools and Staffing Survey* data indicate that the average number of years of teaching experience for central city teachers was 12 years, and for rural teachers it was 11.3 years (Henke et al., 1996). Statistics from 1988 reveal that after controlling for poverty, a higher percentage of rural teachers than urban teachers had less than four years of teaching experience (Lippman et al., 1996). In high-poverty schools, however, the proportion of teachers (12 percent) with this amount of experience was no different across locations. While a larger proportion of rural teachers possibly have less experience, the experience of teachers in high-poverty rural schools is equivalent to that of their peers in high-poverty urban schools.

Principals of high-poverty urban schools, however, are much more likely to report having trouble hiring teachers (30 percent) than are principals in high-poverty rural schools (19 percent), and teacher absenteeism is less of a problem in rural areas, as well (Lippman et al., 1996). Yet, research has documented the need for rural teachers to have awareness of school-community relationships and a better general curricular preparation (DeYoung, 1987).

Teacher quality may also be reflected in teacher salaries. The salaries paid to rural teachers are significantly lower than the salaries paid to their non-rural counterparts (Ballou & Podgursky, 1995). Even high-poverty urban schools paid higher salaries to their teachers than did rural low-poverty schools ($26,772 as compared with $21,470) (Lippman et al., 1996). However, if cost of living were taken into account, the difference between the two figures would be lower.

Despite the belief that staff experience in rural areas is less than optimal, little research has been done on how to improve the qualifications and preparedness of rural educators; and the studies of rural teachers that do exist often do not describe strictly rural phenomena (e.g., Wigle & Sylvester, 1996). A recent review of doctoral dissertations from 1989 to 1993 found only 11 dissertations identifying successful strategies for the retention of qualified personnel in rural schools, and no dissertations identifying successful strategies for the recruitment of qualified personnel in rural schools (Harmon et al., 1996).

Technology Resources

Researchers have posited that access to technology can greatly enhance the learning capabilities of students, particularly those in isolated areas where educational resources are not available in the immediate community (Stern, 1994). Distance learning technology,

educational videos, instructional software, and access to the Internet have all made their way into classroom instruction, and could potentially be powerful solutions for poor, rural schools with curricular disadvantages and few resources (Hall & Barker, 1995).

Research suggests that rural schools have not implemented technology to the same extent as non-rural schools, and they often lack the infrastructure and resources to do so (e.g., Howley & Howley, 1995). In 1995, rural schools had, on average, 54 computers per school, while central city schools had an average of 84 computers (Snyder et al., 1996). However, in the same year, 48 percent of rural schools, and 47 percent of central city schools, had access to the Internet.

Despite differences in the number of computers, information from the 1992 *National Assessment of Educational Progress* and the 1993 *Current Population Survey* indicates that the rates of computer usage are similar in different community types (Greenberg, 1995). Surveys suggest many rural schools participate in distance learning to expand curriculum offerings, although often using relatively inexpensive, less than state-of-the-art, equipment (Barker & Hall, 1994).

Precisely how technology plays, and could play, a positive role in high-poverty schools, however, has not been thoroughly investigated. Although some researchers have suggested that technology is not necessarily the answer to small rural schools' curriculum problems (e.g., Howley & Howley, 1995; Monk, 1989), the potential for improvement through technology is believed to be great.

School-Community Connections

Perhaps the most commonly identified advantage of rural schools is their close connection with the surrounding community, and their ability to provide students with educational opportunities beyond the classroom walls. Researchers and educators alike have agreed that supporting strong school-community connections in rural areas is the most important step in establishing a "sense of place" for rural students, and in maintaining the success and survival of rural schools. Such connections include school interaction with local government, businesses, and social organizations, and families, as well as with other rural schools (e.g., Chow et al., 1994; Stoops & Hull, 1993). Others have cited the importance of community development in education reform (e.g., Tuckermanty & Edwards, in *Proceedings of the Rural Education Issues Meeting*, 1996).

The characteristics of school-community connections believed to benefit rural students include parental participation in schools and student learning, family and community social capital, the use of the community as a curricular resource, and active and productive school-business relations.

Parental Involvement in Student Education

Parental involvement in a student's education has been identified as an important predictor of student success (Thompkins & Deloney, 1994). This involvement may take many forms, including participation in parent-teacher organizations, volunteering at the school, contacting the school about the child's progress, monitoring homework, talking to the child

about what he or she does in school, and talking about future education plans (Lippman et al., 1996).

Researchers suggest that the small size and tight-knit social structure of rural communities foster increased parental involvement in all aspects of their children's lives, including education. One study found that parents whose children attended rural schools had, indeed, significantly higher involvement in their child's education than did parents in any other community type (Sun et al., 1994). By at least one measure of parental involvement, however — talking to children about school — there were no differences across urban, suburban, and rural schools, after controlling for poverty. Even in high-poverty schools, similar percentages of rural, suburban, and urban parents rarely talked with their children about school (Lippman et al., 1996).

Social Capital

Based upon Coleman's work (1988a; 1988b), social capital can be conceptualized as the social benefits individuals enjoy by virtue of their membership in a family or community, and this concept helps to explain how certain characteristics of families, neighborhoods, and communities affect student success in school. According to Coleman (1988), social capital "... inheres in the structure of relations between actors and among actors" (p. S98), and it makes possible the achievement of certain ends that would not otherwise be possible.

The idea of social capital has been a much debated topic in the past decade, and some have suggested that in the absence of financial and human capital, poor, rural communities may be able to prosper through their strong social relationships and tight community bonds. Many have felt that the notion of social capital helps to explain the strength of many rural schools when compared to urban schools, as well as the wide variance in student achievement rates among different rural communities.

Social theorists have proposed a number of variables as appropriate measures of the presence of social capital in a family or community, including:

- the presence of two parents in a household,
- few siblings in a household,
- the mother's expectations that her child will go to college,
- the mother not being employed outside the home when the child was young,
- fewer changes of school, and
- child participation in church activities (Thomkins & Deloney, 1994).

Others, however, have criticized the limited focus of these variables (Thompkins & Deloney, 1994). Several studies, including a number cited in this paper, examine the presence of various types of factors (e.g., educational attainment of parents) representing social capital in poor, rural communities. While a comprehensive picture of social capital in poor, rural communities is missing, Hobbs (1995), Gjelton (1982), and others have provided an overview of rural communities, their relative strengths and weaknesses, and the implications of such

strengths and weaknesses for their education systems. For example, in contrast to the possible strengths gained by social capital connections, some studies have presented unflattering views of rural schools, portraying hiring favoritism among administrators, and conflicts between school personnel and the community around issues in the curriculum (DeYoung, 1987).

Community as Curricular Resource

The intimacy of rural communities, it has been suggested, also provides rural students with educational resources outside of the classroom and in the community at large (e.g., Stern, 1994). While resources in schools may make it difficult to provide wide course offerings or technological innovations, rural schools have the natural resources of the surrounding community to support student learning and provide them with opportunities not available in urban settings. Many researchers have argued that involving students in local community activities and asking them to seek solutions to community problems benefit students by giving them a sense of place within the community, and by helping them to feel that they play an important role in the social and cultural environment around them. In turn, communities benefit from the insight and enthusiasm that students can bring to local issues. By building trust and reliance between students and other community members, the rural community grows stronger and out-migration of rural youth is slowed.

While a number of researchers have put forth these ideas, little systematic research has been done to examine how many rural communities are using the local community as a curricular resource, how they may be managing this collaboration, or the effects of such a close connection on student outcomes.

School-Business Relations

Given the concerns that rural schools are not providing students with the adequate skills and background to enter the workforce as competitive employees, much attention has been paid to how rural school collaboration with local businesses can improve rural students' transition from school to work, and help provide students with both necessary skills and motivation to find post-school employment. Researchers and educators believe that helping students connect to local businesses will help curb the trend of "out-migration" of rural youth, especially those with high school diplomas and post-secondary education, as employers will begin recruiting locally, giving youth an incentive to stay. Case studies in rural communities where school-to-work programs have been established have found enormous success and support of the programs from teachers, administrators, parents, and other members of the community (Miller, 1993; Miller, 1994). Yet, there is no systematic body of research on how widespread and helpful such programs are, particularly in poor, rural communities.

Summary

Research suggests that rural students tend to benefit from the small size of rural schools and from the nature of school-community connections. However, it also indicates that these students are at risk of educational failure due to the lower levels of educational resources in rural schools, such as fewer course offerings. Nonetheless, from the studies reviewed, it is not possible to determine the degree to which the education system characteristics discussed typify schools and school systems in poor, rural areas. It is unclear whether characteristics

called "rural" describe schools in poor, rural areas. Furthermore, there is little research examining whether schools in poor, rural areas differ in fundamental ways from schools in poor, urban areas. More rigorous research identifying the factors underlying the functioning of poor, rural schools and the performance of poor, rural children is needed. Such research would help to identify the factors that affect opportunity to learn in poor communities, and also the factors that uniquely affect the outcomes for children in poor, rural areas.

Conclusions and Research Implications

Our purposes in this paper were to: (1) to review extant literature to determine the degree to which rural location plays a role in educational failure in poor, rural areas; and (2) describe the processes and structures in poor, rural schools that place students at risk of failure. To this end, we first compared the outcomes for students in poor, rural schools with those for students in poor, urban schools, in order to determine the contribution of location to outcomes for students in poor areas. Next, we examined the characteristics of rural communities and their students, in an effort to identify the prevalence in these communities of the factors that place students at risk for educational failure. Finally, we examined the characteristics of rural schools, in order to assess the ways in which rural schools benefit their students, and the ways in which they hinder their students' education.

Our review indicates, in general, that the information specifically on poor, rural students, communities, and schools is sketchy, lacking in focus, and not comparable across studies. While much information is available on rural schools and rural students, few comparisons are available on rural versus rural poor, and rural poor versus urban poor. Such comparisons are necessary to determine whether poverty is the primary factor jeopardizing student educational achievement, or whether rural location and attendant community characteristics also play a significant role.

Despite the difficulties of this incomparability, we can draw some preliminary conclusions about students in poor, rural schools:

- Academic achievement of poor, rural students is better than that of poor, urban students;
- Overall, the magnitude of the problem of low academic achievement is smaller in poor, rural areas than it is in poor, urban areas, as a smaller proportion of rural students are poor and attend schools with other poor students;
- Rural communities are quite diverse, and their economic, social, and demographic characteristics vary across the country;
- The overall characteristics of rural students indicate that, in general, they are different from students in urban schools — rural students tend to be white, live in two-parent families, and are seen as presenting fewer problems in schools — and, therefore, the strategies for dealing with this population may need to reflect such differences. However, minorities do comprise a large proportion of the rural *poor*, and, therefore, the profile of many poor, rural students, especially in some persistent-poverty areas, is likely to be similar to that of many in poor, urban areas; and

- Rural students attend smaller schools that are connected to the community, but they seem not to have the same breadth of curriculum and extracurriculuar offerings as their urban counterparts.

These conclusions are only preliminary, and the need for more rigorous research studies in poor, rural areas is evident.

Based on our review, we outline some research recommendations and discuss the rationale for each. We suggest the following research activities for the At-Risk Institute in the area of rural education:

- Compare the achievement of poor, rural students with that of poor, urban students, using NCES databases such as the *NELS:88 Second Follow-up Component* and the *National Assessment of Educational Progress*;
- Investigate the characteristics of poor, rural schools and districts, using NCES datasets such as the *Schools and Staffing Survey* 1993-94 and the *Common Core of Data*, and compare with characteristics of schools and districts in other geographic areas and poverty levels;
- Develop a taxonomy of rural areas and their education systems;
- Review state, district, and school initiatives to improve rural education;
- Conduct focused, systematic case studies of poor, rural schools and districts and compare them to poor, urban school schools and districts, as well as to wealthier rural schools and school districts, in order to assess the commonalties and differences between these settings.

Below, we discuss the rationale for each of these suggestions.

<u>Compare the achievement of poor, rural and poor, urban students</u>. An investigation using recent NCES data would help to determine whether location matters in educational outcomes, if poverty is taken into consideration, as most research has not simultaneously accounted for both variables. Both NCES databases cited above are the most recent available on the academic performance of school children. Thus, for example, analyzing the *NELS:88* grade 12 data would provide a more current picture of the performance of poor, rural students as compared with other students. Both individual-level poverty as well as school-level poverty concentration would be important to investigate. The first would provide information on whether location matters, after controlling for individual-level poverty, but the results would not indicate whether the rural school itself happens to have high or low concentrations of poverty or whether the student lives in a poor neighborhood. Thus, if rural location is shown to be associated with student outcomes, we would not be able to determine whether the poverty concentration of the rural school matters. On the other hand, when considering school-level poverty, we can determine the effects of poverty concentration, but not of individual-level poverty. Both models are important, as both would yield information on the effects of location, regardless of poverty.

<u>Investigate the characteristics of poor, rural schools and districts</u>. A mapping of the characteristics of rural schools and districts by different levels of poverty would provide a

comprehensive picture of the variation in organizational, financial, and student characteristics across rural areas. For instance, the Census data show that there are persistent pockets of poverty in rural areas, and learning about the characteristics of schools and students in these areas would help to determine whether their educational structures are more similar to those of other rural schools and districts or to poor, urban schools and districts. A start in this direction could be to identify rural school districts with high concentrations of minority and LEP students, using the *Common Core of Data*, and contrasting the education system characteristics in these districts with those of poor, urban schools and districts in the same region. Using the *Schools and Staffing Survey*, characteristics such as average school size, teacher compensation, and teacher characteristics also can be examined and contrasted with those of other types of schools.

Develop a taxonomy of rural areas. Although all rural areas, by definition, have in common a relatively small population and low population density, research indicates there also is much diversity across these areas. An understanding of the economic, social, and geographic factors that contribute to this diversity would be important in identifying the factors that affect education systems. For example, Gjelton (1982) suggests that isolation, regardless of poverty, affects a school system's access to resources, and, therefore, has an influence on student achievement. A start in this direction could be to develop or identify a set of variables related to social, economic, and geographic characteristics, to be included in future education surveys.

Review strategies. Little systematic information is available on the strategies rural schools and districts, especially those in poor areas, use to provide effective education to their students. For example, a review of the strategies districts use to stabilize revenues when operating on a small tax base would be useful information, especially if it is shown to result in maintaining or enhancing the factors associated with student achievement. Similarly, a review of the strategies different states follow to provide financial and other types of aid to rural and urban schools and districts would be instructive. It would provide insights into the problems and issues faced by states in their urban and rural areas, and the methods used to solve those problems. It also would help to assess whether states are using economic development in rural areas as a way to improve rural education.

Conduct systematic comparative case studies. Studies using large datasets and documents would be useful to identify the differences between schools in poor, rural areas and those in other areas. However, they would not yield aggregate information on school-community connections, school processes, community characteristics, and student outcomes. A case-study of carefully selected sample of poor, rural communities (e.g., mining towns, farming communities, tribal reservations) in different regions of the country (e.g., Appalachia, the Mississippi Delta, the Southwest) compared with poor, urban communities in the same regions would offer a focused picture of similarities and differences of education in poor communities across geographic locations. Conversely, case studies comparing a wide range of rural schools — from wealthy to poor, and most to least successful — would provide insights into effective practices for schools in rural areas. In both instances, qualitative case study analysis would highlight issues that are not reflected in national quantitative data. Information from this study would yield preliminary answers to questions such as: What are the characteristics of effective rural education? What unique factors affect student outcomes in

poor, rural areas? What type of rural education allows students to function in either rural or urban settings?

The first step in undertaking any of the suggested research activities would be to map the location and characteristics (e.g., size, minority population, per pupil expenditures) of schools and districts in poor, rural areas. This activity would help to identify what proportion of the total education system such schools and districts constitute, and how they are distributed across the country.

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RURAL EDUCATION ISSUES MEETING PARTICIPANTS

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APPENDIX B:
REFERENCED JOURNALS

The following journals are covered by the ERIC database for the *ERIC Clearinghouse on Rural Education and Small Schools*. These periodicals are the "body" of research journals consulted to compile the research for this literature review.

Akwe:kon Journal
Alberta Journal of Educational Research
American Indian and Alaska Native Mental Health Research
American Indian Culture and Research Journal
American Indian Journal
American Indian Library Newsletter
American Indian Magazine
American Indian Quarterly
Appalachia
Appalachian Journal
Aztlan: A Journal of Chicano Studies

Bilingual Research Journal

Camping Magazine
Canadian Journal of Native Education
Comparative Education
Comparative Education Review

Echoes: The Northern Maine Journal of Rural Culture
Education Canada

Grassroots Development
Great Plan Quarterly

Hands On
Hispanic Journal of Behavioral Sciences
Hispanic Magazine
Human Services in the Rural Environment

Journal of Adventure Education and Outdoor Leadership
Journal of American Indian Education
Journal of Experiential Education
Journal of Multicultural Social Work
Journal of Outdoor Education
Journal of Research in Rural Education
Journal of Rural Community Psychology
Journal of Rural Studies

Midwestern Educational Researcher

Native Peoples Magazine
Now and Then Magazine

Outdoor Network Newsletter

Pathways to Outdoor Communication
Pathways: The Ontario Journal of Outdoor Education

Rural Conditions and Trends
Rural Development Perspectives
Rural Education in Australia
Rural Educator
Rural Electrification Magazine
Rural Sociologist
Rural Sociology
Rural Special Education Quarterly
Russian Language Journal

Scientific Journal of Orienteering
Scottish Educational Review
Small Town
Social Forces
Southern Rural Sociology
Studies of American Indian Literature

WICAZO SA Review
Winds of Change
Workbook, The

APPENDIX C:
DEFINITIONS

The following three definitions of geographic areas are summarized from *Rural Development: Profile of Rural Areas* (GAO, 1993).

Bureau of the Census. The Bureau of the Census defines an "urbanized area" (UA) by population density. Each UA includes a central city and a surrounding, densely settled area that, together, comprise a population of 50,000 or more individuals and a population density more than 1,000 persons per square mile. Under this definition, all persons living in UAs and in places (cities, towns, villages) with a population of 2,500 or more outside of UAs are considered Urban. All others are considered Rural (from GAO, 1993). UAs do not necessarily follow county lines, and they may incorporate parts of different counties.

Office of Management and Budget. The OMB defines those areas as Metro (Metropolitan Statistical Area—MSA) that include at least one city with 50,000 or more residents, or an urbanized area (as defined by the Bureau of the Census) with at least 50,000 residents and a total MSA population of 100,000 or more. The OMB standards dictate that each MSA must include the county in which the central city is located (central county) and additional contiguous counties, if they are economically and socially integrated with the central county. Any county not included in an MSA is considered non-metro.

Economic Research Service. The ERS uses rural-urban continuum codes to distinguish among metro, nonmetro (adjacent to metro areas), and nonmetro (not adjacent to metro areas) counties. The rural-urban continuum code reads as follows:

0 *Central counties of metro areas with population of 1 million or more*
1 *Fringe counties of metro areas with population of 1 million or more*
2 *Counties in metro areas with population of 250,000 to 1 million*
3 *Counties in metro areas with population fewer than 250,000*
4 *Urban population of 20,000 or more, adjacent to a metro area*
5 *Urban population of 20,000 or more, not adjacent to a metro area*
6 *Urban population of 2,500 to 19,999, adjacent to a metro area*
7 *Urban population of 2,500 to 19,999, not adjacent to a metro area*
8 *Completely rural or urban population of fewer than 2,500, adjacent to a metro area*
9 *Completely rural or urban population of fewer than 2,500, not adjacent to a metro area*

Codes 0 through 3 comprise metro counties; Codes 4, 6, & 8 comprise nonmetro counties, adjacent to metro areas; and codes 5, 7, and 9 comprise nonmetro counties, not adjacent to metro areas.

The NCES-developed Johnson code is summarized from *Instructions for Completing the Nonfiscal Surveys of the Common Core of Data, 1995-96,* National Center for Education Statistics, U.S. Department of Education.

Johnson Code. The Johnson code categorizes community types into the following seven categories:

1 *Large City: A central city of a CMSA or MSA, with the city having a population greater than or equal to 250,000*

2 *Mid-size City: A central city of a CMSA or MSA, with the city having a population less than 250,000*

3 *Urban Fringe of a Large City: Any incorporated place, CDP, or non-place territory within a CMSA or MSA of a Large City, and defined as urban by the Census Bureau*

4 *Urban Fringe of a Mid-size City: Any incorporated place, CDP, or non-place territory within a CMSA or MSA of a Mid-size City, and defined as urban by the Census Bureau*

5 *Large Town: An incorporated place of CDP with a population greater than or equal to 25,000 and located outside a CSMA or MSA*

6 *Small Town: An incorporated place or CDP with population less than 25,000 or equal to 2,500 and located outside an CMSA or MSA*

7 *Rural: Any incorporated place, CDP, or non-place territory designated as rural by the Census bureau*

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